



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,767	11/24/2003	Jack A. Smith	090936.0529	4914

31625 7590 12/30/2005  
BAKER BOTTS L.L.P.  
PATENT DEPARTMENT  
98 SAN JACINTO BLVD., SUITE 1500  
AUSTIN, TX 78701-4039

EXAMINER

SAYOC, EMMANUEL

ART UNIT PAPER NUMBER

3746

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/720,767

Applicant(s)

SMITH ET AL.

Examiner

Emmanuel Sayoc

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-32 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. This application contains claims directed to the following patentably distinct species of the claimed invention:

Group 1 (calculated engine control parameters)

Species 1A, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), air flow to the engine, drawn to claim 2.

Species 1B, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), engine spark timing, drawn to claims 3-5.

Species 1C, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), fuel quantity delivered to the engine, drawn to claims 6, 10, and 11.

Species 1D, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), fuel injection or admission timing, drawn to claims 7-9.

Species 1E, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), pre-chamber fuel pressure, drawn to claims 7-9.

Species 1F, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), air-to-fuel ratio, drawn to claims 14 and 15.

Species 1G, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), turbocharger wastegate control parameters, drawn to claim 16.

Species 1H, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), engine efficiency, drawn to claim 27.

Species 1I, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of engine control parameter(s), engine emissions, drawn to claim 30.

Group 2 (calculated engine control parameters)

Species 2A, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of compressor control parameter(s), compressor load steps, drawn to claims 21 and 23.

Species 2B, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of compressor control parameter(s), compressor pocket positions, drawn to claim 22.

Species 2C, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of compressor control parameter(s), compressor suction conditions, drawn to claim 24.

Species 2D, - a method of controlling an internal combustion engine that drives a reciprocating gas compressor involving the calculation of compressor control parameter(s), compressor discharge conditions, drawn to claim 24.

2. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, one from Group 1, and one from Group 2, for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1, 17-20, 26, and 29-32 generic.

It is noted for the record that neither the specifications nor the claims specifically state that all the engine and compressor parameters must be used in the control methods calculation steps. The operant phrase in the specification pages 11 and 12, is "may include, without limitation [the parameters listed in the specification and claims]," in the claim 31 "from the group of [i.e. at least one of]," and in claim 32 "at least the [i.e. it can include parameters not listed]." Theoretically the parameters do not even need to be one of the ones listed in the specification, or they can be one of the ones parameters claimed. Therefore there is no requirement that the claimed parameters all be used in the method steps calculation.

3. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims

Art Unit: 3746

readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

4. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

5. Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

6. A telephone call was made to Ann Livingston on 12/23/05 to request an oral election to the above restriction requirement, but did not result in an election being made.

7. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one

or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Sayoc whose telephone number is (571) 272 4832. The examiner can normally be reached on M-F 8-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Emmanuel Sayoc  
Examiner  
Art Unit 3746

ECS